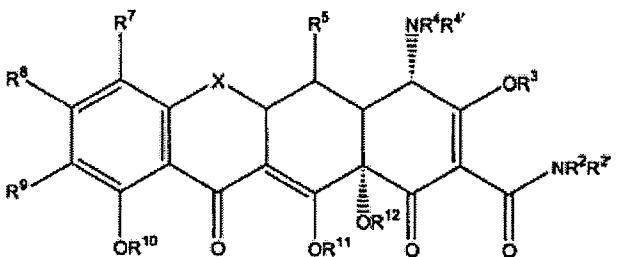


AMENDMENTS TO THE CLAIMS:

Listing of Claims:

This listing of claims will replace all prior versions of the claims and listing of the claims in the application:

1. **(Currently Amended)** A substituted tetracycline compound, wherein said compound is of the formula:



(I)

wherein:

X is $\text{CHC}(\text{R}^{13}\text{Y'Y})$, $\text{CR}^{6'}\text{R}^6$, S, NR^6 , or O;

R^2 is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $\text{R}^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^2 , R^3 , R^{10} , R^{11} and R^{12} are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6 , $\text{R}^{6'}$, and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R^7 is hydrogen, or $\text{NR}^{7c}\text{C}(=\text{W'})\text{WR}^{7a}$;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulphydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R^9 is hydrogen, or $\text{NR}^{9c}\text{C}(=\text{Z'})\text{ZR}^{9a}$;

Z is O;

Z' is O or S;

R^{9a} is unsubstituted C₃-C₁₀ alkyl, substituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, ~~substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxy carbonyl, substituted or unsubstituted aryl carbonyl, substituted or unsubstituted alkyl amine, substituted or unsubstituted arylalkyl, or substituted or unsubstituted aryl, substituted or unsubstituted heterocyclic, substituted or unsubstituted heteroaromatic,~~

wherein said substituted alkyl is substituted with halogen, amino, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxycarbonylamino, alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxycarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

further wherein said substituted alkenyl, substituted alkynyl, substituted alkoxy, ~~substituted alkylthio, substituted alkylsulfinyl, substituted alkylsulfonyl, substituted arylsulfonyl, substituted alkoxy carbonyl, substituted aryl carbonyl, substituted alkyl amine, substituted arylalkyl, or substituted aryl, substituted heterocyclic, or substituted heteroaromatic~~ is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxycarbonylamino, alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxycarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxycarbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic or heteroaromatic;

W is CR^{7d}R^{7e}, NR^{7b} or O;

W' is O or S;

R^{7a}, R^{7b}, R^{7c}, R^{7d}, and R^{7e} are each independently hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, arylsulfonyl, alkoxycarbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic, absent, or a prodrug moiety, and R^{7d} and R^{7e} may be linked to form a ring;

and pharmaceutically acceptable salts thereof, provided that R⁹ is not hydrogen when R⁷ is hydrogen.

2. **(Currently Amended)** The compound of claim 1, wherein R^2 , $R^{2'}$, R^3 , $[,]$, R^{10} , R^{11} , and R^{12} are each hydrogen.
3. **(Original)** The compound of claim 2, wherein R^4 and $R^{4'}$ are each alkyl.
4. **(Currently Amended)** The compound of claim 3, wherein R^4 and $R^{4'}$ are each methyl.
5. **(Canceled)**
6. **(Original)** The compound of claim 4, wherein R^5 is hydrogen.
7. **(Original)** The compound of claim 6, wherein X is CH_2 , and R^7 is hydrogen.
8. **(Canceled)**
9. **(Previously Presented)** The compound of claim 4, wherein R^5 is hydroxyl and X is CHR^6 .
10. **(Previously Presented)** The compound of claim 9, wherein R^6 is CH_3 .
11. **(Original)** The compound of claim 1, wherein R^9 is $NR^{9c}C(=Z')ZR^{9a}$.
12. **(Original)** The compound of claim 11, wherein R^{9c} is hydrogen.
13. **(Original)** The compound of claim 11, wherein Z' is oxygen.
14. **(Original)** The compound of claim 11, wherein Z' is sulfur.
- 15-18. **(Canceled)**
19. **(Currently Amended)** The compound of claim 11, wherein R^{9a} is selected from the group consisting of substituted C_3-C_{10} -alkyl, substituted or unsubstituted alkynyl, or substituted or unsubstituted aryl, arylalkyl, or heteroaromatic.
20. **(Canceled)**
21. **(Currently Amended)** The compound of claim 19, wherein said substituted C_3-C_{10} alkyl is substituted with one or more substituents selected from the group consisting of alkoxy carbonyl, amino, aryl carbonyl, halogen, hydroxy, alkylamino, alkoxy, or aryl.
22. **(Canceled)**
23. **(Previously Presented)** The compound of claim 19, wherein said substituted alkyl is substituted with an aryl group.
24. **(Original)** The compound of claim 23, wherein said aryl group is phenyl.
25. **(Previously Presented)** The compound of claim 19, wherein said substituted alkyl is substituted with one or more halogens.

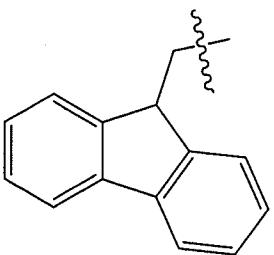
26. **(Currently Amended)** The compound of claim 24claim 25, wherein said halogen is bromine.

27-29. **(Canceled)**

30. **(Currently Amended)** The compound of claim 19claim 1, wherein R^{9a} is substituted or unsubstituted aryl.

31. **(Original)** The compound of claim 30, wherein said substituted or unsubstituted aryl is naphthyl.

32. **(Currently Amended)** The compound of claim 30claim 23, wherein said substituted or unsubstituted aryl is of the formula said substituted alkyl group is:



33. **(Original)** The compound of claim 30, wherein said substituted or unsubstituted aryl is phenyl.

34. **(Currently Amended)** The compound of claim 33, wherein said arylphenyl is substituted with one or more substituents selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkoxy, aryloxy, alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, aryloxycarbonyl, amido, halogen, nitro, azo, alkyl sulfonyl, and arylsulfonyl.

35. **(Original)** The compound of claim 34, wherein said substituent is alkyl.

36. **(Original)** The compound of claim 35, wherein said alkyl is unsubstituted.

37. **(Original)** The compound of claim 35, wherein said alkyl is methyl.

38. **(Original)** The compound of claim 35, wherein said alkyl is substituted with one or more halogens.

39. **(Currently Amended)** The compound of claim 34, wherein said substituent is methoxyalkoxy and further wherein said alkoxy is methoxy.

40. **(Original)** The compound of claim 34, wherein said substituent is selected from the group consisting of alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, aryloxycarbonyl, and amido.

41-55. **(Canceled)**

56. **(Original)** The compound of claim 1, wherein R^7 is $NR^{7c}C(=W')WR^{7a}$.

57. **(Original)** The compound of claim 56, wherein R⁹ is hydrogen.

58. **(Original)** The compound of claim 57 wherein R^{7c} is hydrogen.

59. **(Currently Amended)** The compound of claim 57, wherein W' is oxygenO.

60. **(Currently Amended)** The compound of claim 57, wherein W' is sulfurS.

61. **(Original)** The compound of claims 59 or 60, wherein W is NR^{7b}.

62. **(Currently Amended)** The compound of claims 59 or 60, wherein W is oxygenO.

63. **(Previously Presented)** The compound of claim 57, wherein R^{7a} is selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl, and heteroaromatic.

64. **(Original)** The compound of claim 63, wherein R^{7a} is substituted or unsubstituted alkyl.

65. **(Original)** The compound of claim 64, wherein said alkyl is substituted with an aryl group.

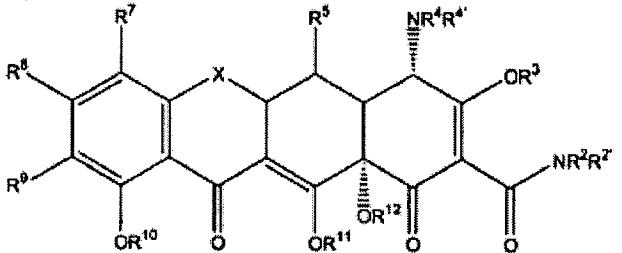
66. **(Currently Amended)** The compound of claim 63, wherein said substituted or unsubstituted R^{7a} is aryl and further wherein said aryl is phenyl.

67. **(Currently Amended)** The compound of claim 66, wherein said arylphenyl is substituted with one or more substituents selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkoxy, aryloxy, alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, aryloxycarbonyl, amido, halogen, nitro, azo, alkyl sulfonyl, and arylsulfonyl.

68. **(Original)** The compound of claim 67, wherein said substituent is alkyl, alkoxy, or nitro.

69-81. **(Canceled)**

82. **(Currently Amended)** A pharmaceutical composition comprising a therapeutically effective amount of a substituted tetracycline compound and a pharmaceutically acceptable carrier, wherein said substituted tetracycline is of the formula:



(I)

wherein:

X is $\text{CHC}(\text{R}^{13}\text{Y}'\text{Y})$, $\text{CR}^6'\text{R}^6$, S, NR^6 , or O;

R^2 is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $\text{R}^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

$\text{R}^{2'}$, R^3 , R^{10} , R^{11} and R^{12} are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6 , $\text{R}^{6'}$, and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R^7 is hydrogen or $\text{NR}^{7c}\text{C}(=\text{W}')\text{WR}^{7a}$;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulhydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R^9 is hydrogen, or $\text{NR}^{9c}\text{C}(=\text{Z}')\text{ZR}^{9a}$;

Z is O;

Z' is O or S;

R^{9a} is unsubstituted $\text{C}_3\text{-C}_{10}$ alkyl, substituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, ~~substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxy carbonyl, substituted or unsubstituted aryl carbonyl, substituted or unsubstituted alkylamino, substituted or unsubstituted arylalkyl, or substituted or unsubstituted aryl, substituted or unsubstituted heterocyclic, substituted or unsubstituted heteroaromatic,~~

wherein said substituted alkyl is substituted with halogen, amino, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonylamino, alkoxy carbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

further wherein said substituted alkenyl, substituted alkynyl, substituted alkoxy, ~~substituted alkylthio, substituted alkylsulfinyl, substituted alkylsulfonyl, substituted~~

arylsulfonyl, substituted alkoxy carbonyl, substituted aryl carbonyl, substituted alkyl amine, substituted aryl alkyl, or substituted aryl, substituted heterocyclic, or substituted heteroaromatic is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkyl carbonyloxy, alkyloxy carbonyl, aryl carbonyloxy, alkoxy carbonyl amino, alkoxy carbonyloxy, aryloxy carbonyloxy, carboxylate, alkyl carbonyl, alkyl amino acarbonyl, aryl alkyl aminocarbonyl, alkenyl aminocarbonyl, alkyl carbonyl, aryl carbonyl, amino alkyl, aryl alkyl carbonyl, alkenyl carbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclic, alkylaryl, aryl or heteroaryl;

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxy carbonyl, aryl carbonyl, alkyl amino, aryl alkyl, aryl, heterocyclic or heteroaromatic;

W is $CR^{7d}R^{7e}$, NR^{7b} or O;

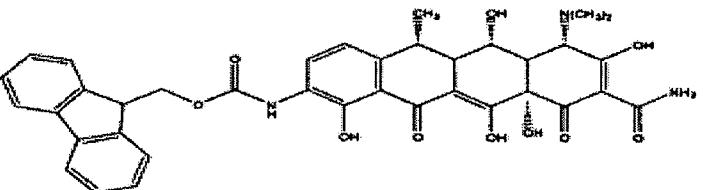
W' is O or S;

R^{7a} , R^{7b} , R^{7c} , R^{7d} , and R^{7e} are each independently hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, arylsulfonyl, alkoxy carbonyl, aryl carbonyl, alkyl amino, aryl alkyl, aryl, heterocyclic, heteroaromatic, absent, or a prodrug moiety, and R^{7d} and R^{7e} may be linked to form a ring;

and pharmaceutically acceptable salts thereof, provided that R^9 is not hydrogen when R^7 is hydrogen.

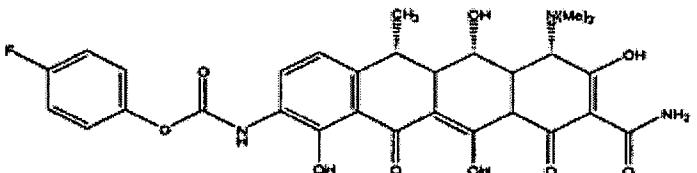
83-102. (Cancelled)

103. (Currently Amended) The compound of claim 1, wherein said compound is



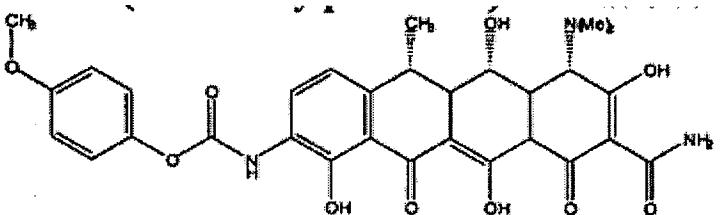
or a pharmaceutically acceptable salt thereof.

104. (Currently Amended) The compound of claim 1, wherein said compound is



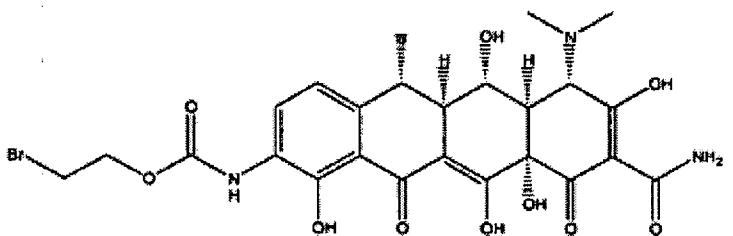
or a pharmaceutically acceptable salt thereof.

105. **(Currently Amended)** The compound of claim 1, wherein said compound is



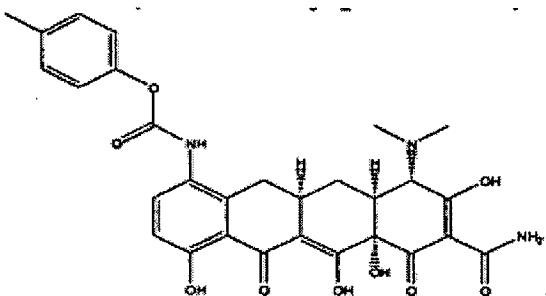
or a pharmaceutically acceptable salt thereof.

106. **(Currently Amended)** The compound of claim 1, wherein said compound is



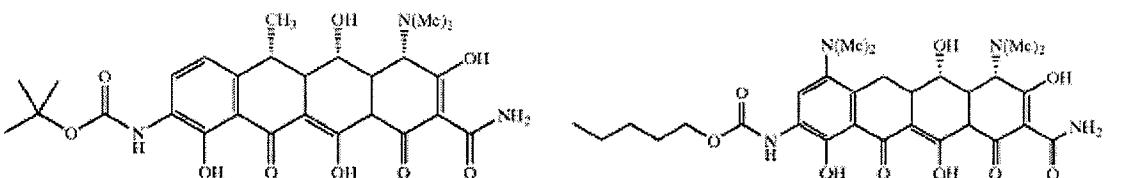
or a pharmaceutically acceptable salt thereof.

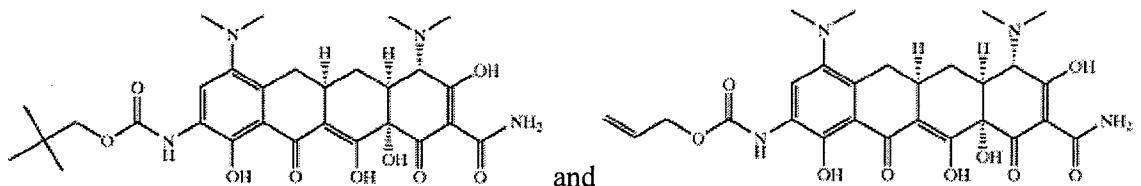
107. **(Currently Amended)** The compound of claim 1, wherein said compound is



or a pharmaceutically acceptable salt thereof.

108. **(Previously Presented)** A substituted tetracycline compound, wherein said compound is selected from the group consisting of





or a pharmaceutically acceptable salt thereof.

109. **(Currently Amended)** The compound of claim 1, wherein said compound is doxycycline 9-carbamic acid 9*H*-fluoren-9-yl methyl ester or a pharmaceutically acceptable salt thereof.

110. **(Currently Amended)** The compound of claim 1, wherein said compound is FMOC 9-amino doxycycline or a pharmaceutically acceptable salt thereof.

111. **(Currently Amended)** The compound of claim 1, wherein said compound is 9-(4'-fluorophenyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.

112. **(Currently Amended)** The compound of claim 1, wherein said compound is 9-(4'-methoxyphenyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.

113-116. **(Canceled)**

117. **(Currently Amended)** The compound of claim 1, wherein said compound is 9-(2'-bromoethyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.

118. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-methylphenyl) sencycline carbamate or a pharmaceutically acceptable salt thereof.

119. **(Currently Amended)** The compound of claim 1, wherein said compound is doxycycline 7-carbamic acid 7*H*-fluoren-7-yl methyl ester or a pharmaceutically acceptable salt thereof.

120. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(~~naphthyn-1-yl~~¹~~naphthyn-1-yl~~²) doxycycline urea or a pharmaceutically acceptable salt thereof.

121. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(3-methyl-1-butyl) doxycycline urea or a pharmaceutically acceptable salt thereof.

122. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-phenyl doxycycline urea or a pharmaceutically acceptable salt thereof.

123. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-t-butyl doxycycline urea or a pharmaceutically acceptable salt thereof.

124. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-Fmoc amino doxycycline or a pharmaceutically acceptable salt thereof.

125. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-chloro-2-trifluoromethylphenyl) doxycycline urea or a pharmaceutically acceptable salt thereof.

126. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-fluorophenyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.

127. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-methoxyphenyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.

128. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-BOC amino doxycycline or a pharmaceutically acceptable salt thereof.

129. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(naphthyn-1-ylnaphthyn-1-yl) doxycycline thiourea 5-propanoic acid ester or a pharmaceutically acceptable salt thereof.

130. **(Currently Amended)** The compound of claim 1, wherein said compound is doxycycline 7-thiocarbamic acid 7H-fluoren-7-yl methyl ester or a pharmaceutically acceptable salt thereof.

131. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(naphthyn-1-ylnaphthyn-1-yl) doxycycline thiourea or a pharmaceutically acceptable salt thereof.

132. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(3-methyl-1-butyl) doxycycline thiourea or a pharmaceutically acceptable salt thereof.

133. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-phenyl amino doxycycline thiourea or a pharmaceutically acceptable salt thereof.

134. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-t-butyl amino doxycycline thiourea or a pharmaceutically acceptable salt thereof.

135. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-chloro-2'-trifluoromethylphenyl) doxycycline thiourea or a pharmaceutically acceptable salt thereof.

136. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-fluorophenyl) doxycycline thiocarbamate or a pharmaceutically acceptable salt thereof.

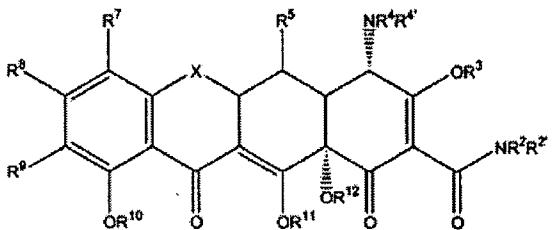
137. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-methoxyphenyl) doxycycline thiocarbamate or a pharmaceutically acceptable salt thereof.

138. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(naphthyn-1-ylnaphthyn-1-yl) doxycycline urea 5-propanoic acid ester or a pharmaceutically acceptable salt thereof.

139. **(Currently Amended)** A tetracycline compound, wherein said compound is selected from the group consisting of:

9-neopentyl minocycline carbamate;
9-BOC amino doxycycline;
9-(n-pentyl) minocycline carbamate;
9-BOC amino minocycline carbamate;
9-(n-pentyl) minocycline carbamate;
9-prop-2'-enyl minocycline carbamate;
9-ethyl minocycline carbamate;
9-n-butyl minocycline carbamate
9-n-but-3-enyl minocycline carbamate; and
9-i-butyl minocycline carbamate; or a pharmaceutically acceptable salt thereof.

140. (Currently Amended) A substituted tetracycline compound, wherein said compound is of the formula:



(I)

wherein:

X is $\text{CHC}(\text{R}^{13}\text{Y})\text{Y}$, CR^6R^6 , S, NR^6 , or O;

R^2 is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $\text{R}^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

$\text{R}^{2'}$, R^3 , R^{10} , R^{11} and R^{12} are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6 , $\text{R}^{6'}$, and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R^7 is dialkylamino;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulfhydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R⁹ is NR^{9c}C(=Z')ZR^{9a};

Z is O;

Z' is O or S;

R^{9a} is unsubstituted or substituted C₅-C₁₀ alkyl, substituted or unsubstituted C₄-C₁₀ alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, ~~substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxycarbonyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted arylalkyl, or substituted or unsubstituted aryl, substituted or unsubstituted heterocyclic, substituted or unsubstituted heteroaromatic,~~

wherein said substituted C₅-C₁₀ alkyl is substituted with halogen, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxycarbonylamino, alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxycarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

further wherein said substituted C₄-C₁₀ alkenyl, substituted alkynyl, substituted alkoxy, ~~substituted alkylthio, substituted alkylsulfinyl, substituted alkylsulfonyl, substituted arylsulfonyl, substituted alkoxycarbonyl, substituted arylcarbonyl, substituted alkylamino, substituted arylalkyl, or substituted aryl, substituted heterocyclic, or substituted heteroaromatic~~ is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxycarbonylamino, alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxycarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl; and

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxycarbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic or heteroaromatic; and pharmaceutically acceptable salts thereof.

141. **(Previously Presented)** The compound of claim 140, wherein R², R^{2'}, R³, R¹⁰, R¹¹, and R¹² are each hydrogen.

142. **(Currently Amended)** The compound of claim 140, wherein R⁴ and R^{4'} are each methyl.

143. **(Previously Presented)** The compound of claim 140, wherein R⁵ is hydrogen.

144. (Canceled)

145. (Currently Amended) The compound of claim 144claim 140, wherein R^{9c} is hydrogen.

146. (Currently Amended) The compound of claim 144claim 140, wherein Z' is oxygenO.

147. (Currently Amended) The compound of claim 144claim 140, wherein Z' is sulfurS.

148. (Canceled)

149. (Currently Amended) The compound of claim 144claim 140, wherein R^{9a} is substituted C₅-C₁₀ alkyl, substituted or unsubstituted alkynyl, or substituted or unsubstituted aryl, arylalkyl, or heteroaromatic.

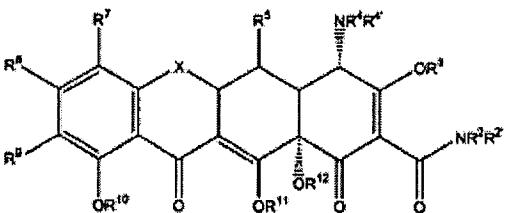
150. (Currently Amended) The compound of claim 149, wherein said substituted C₅-C₁₀ alkyl is substituted with one or more substituents selected from the group consisting of alkoxy carbonyl, aryl carbonyl, halogen, hydroxyl, alkoxy, or aryl.

151. (Currently Amended) The compound of claim 149claim 140, wherein R^{9a} is substituted or unsubstituted aryl.

152. (Previously Presented) The compound of claim 151, wherein said substituted or unsubstituted aryl is phenyl.

153. (Currently Amended) The compound of claim 151claim 152, wherein said arylphenyl is substituted with one or more substituents selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkoxy, aryloxy, alkyl carbonyl, aryl carbonyl, alkoxy carbonyl, aryloxy carbonyl, amido, halogen, nitro, azo, alkyl sulfonyl, and aryl sulfonyl.

154. (Currently Amended) A pharmaceutical composition comprising a therapeutically effective amount of a substituted tetracycline compound and a pharmaceutically acceptable carrier, wherein said substituted tetracycline is of the formula:



(I)

wherein:

X is CHC(R¹³Y'Y), CR⁶'R⁶, S, NR⁶, or O;

R² is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $R^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

$R^{2'}$, R^3 , R^{10} , R^{11} and R^{12} and are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6 , $R^{6'}$, and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R^7 is dialkylamino;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulfhydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R^9 is $NR^{9c}C(=Z')ZR^{9a}$;

Z is O;

Z' is O or S;

R^{9a} is unsubstituted or substituted C_5 - C_{10} alkyl, substituted or unsubstituted C_4 - C_{10} alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, ~~substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted arylalkyl, or substituted or unsubstituted heterocyclic, substituted or unsubstituted heteroaromatic,~~ substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted arylalkyl, or substituted or unsubstituted heterocyclic, substituted or unsubstituted heteroaromatic,

wherein said substituted C_5 - C_{10} alkyl is substituted with halogen, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxycarbonylamino, alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxycarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocycl, alkylaryl, aryl or heteroaryl;

further wherein said substituted C_4 - C_{10} alkenyl, substituted alkynyl, substituted alkoxy, ~~substituted alkylthio, substituted alkylsulfinyl, substituted alkylsulfonyl, substituted arylsulfonyl, substituted alkoxycarbonyl, substituted arylcarbonyl, substituted alkylamino, substituted arylalkyl, or substituted aryl, substituted heterocyclic, or substituted heteroaromatic~~ is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxycarbonylamino, alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl,

arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl; and

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxy carbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic or heteroaromatic; and pharmaceutically acceptable salts thereof.

155. (New) The compound of claim 140, wherein said compound is minocycline 9-carbamic acid 9*H*-fluoren-9-yl methyl ester or a pharmaceutically acceptable salt thereof.

156. (New) The compound of claim 140, wherein said compound is FMOC 9-amino minocycline or a pharmaceutically acceptable salt thereof.

157. (New) The compound of claim 140, wherein said compound is 9-(4'-fluorophenyl) minocycline carbamate or a pharmaceutically acceptable salt thereof.

158. (New) The compound of claim 140, wherein said compound is 9-(4'-Methoxyphenyl) minocycline carbamate or a pharmaceutically acceptable salt thereof.